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Despite recent increases in teacher salaries, the earnings of teachers as compared to those of other college graduates in the Southeast have changed little in the last five years. This report compares the average annual earnings of teachers to the average annual earnings of college graduates in full-time, salaried nonteaching positions in the six states (Alabama, Florida, Georgia, Mississippi, North Carolina, and South Carolina) served by the Southeastern Educational Improvement Laboratory. This report is the fifth in a series of annual analyses of wage comparability. (JD)

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by Ronald Bird

March 1989

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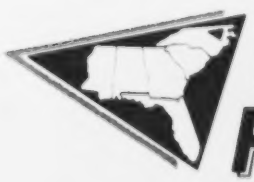

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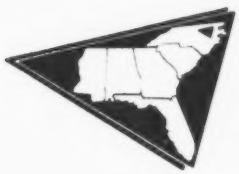

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08-008

An Analysis of the Comparability of Teacher Salaries to the Earnings of Other College Graduates in the Southeast: 1988 Update

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March 1989

Executive Summary

An Analysis of the Comparability of Teacher Salaries to the Earnings of Other College Graduates in the Southeast: 1988 Update

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Despite recent increases in teacher salaries, the earnings of teachers as compared to those of other college graduates in the Southeast have changed little in the last five years. As new education reforms are implemented, there is an increasing need for the continued and new employment of quality teachers. Policymakers can help to improve both the quantity and quality of teachers available by providing earnings, at all stages of a teaching career, that are competitive with those in other occupations.

Based on data compiled from the latest U.S. Census Bureau's Current Population Survey (March 1988), this report compares the average annual earnings of teachers to the average annual earnings of college graduates in full-time, salaried, nonteaching positions in the six states (Alabama, Florida, Georgia, Mississippi, North Carolina, and South Carolina) served by the Southeastern Educational Improvement Laboratory. This report is the fifth in a series of annual analyses of wage comparability.

Recently, public school teacher salaries in the Southeast, especially those of beginning teachers, have risen steadily. However, although average teacher salaries have risen more than $7,187 from the 1982-83 school year to the last school year (1987-88), the earnings of other college-educated workers also have been increasing. Consequently, there has been little progress in closing the gap between the earnings of teachers and other college graduates.

Table 1 shows that while the average teacher in the Southeast had a salary of $24,572 during the 1987-88 school year, other college-educated workers earned approximately 40 percent more than teachers. The average income difference of almost $10,000 per year may be a strong disincentive for attracting many competent persons into the teaching profession. It also may encourage talented teachers to leave the teaching profession for other careers.

Table 1
Growth of Average Earnings of Teachers and Nonteachers in the Southeast

	School Year					
School Year:	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
Teachers	$17,385	$18,288	$20,489	$22,128	$23,637	$24,572
Other College-Educated Workers	$26,828	$27,753	$29,688	$31,019	$32,674	$34,455*

*Estimated value based on income growth trend of 1982-1987 data.

Sources: American Federation of Teachers, Survey and Analysis of Salary Trends, 1988, and U. S. Bureau of the Census, Current Population Survey, machine-readable data file, March 1983-1988.

Besides comparing average earnings, this report presents several other comparisons between teachers and other college-educated workers. One important comparison is the earnings growth throughout a career because individuals considering an occupation are interested in how they will be rewarded for increased experience. Table 2 presents a comparison of the distribution of earnings by age for teachers and other college-educated workers. Although the earnings of teachers in the age 20-29 category lag by $4,550, the gap increases more than two- and threefold for the next two age categories. By the time teachers are in the preretirement 50-59 age category, they earn an average of $16,000 less per year than other college-educated workers in the Southeast.

Table 2
Comparison of Earnings of Teachers and Other College-Educated Workers in the Six Southeastern States by Age, 1987

Age Cohort:	20-29	30-39	40-49	50-59
Teachers	$19,073	$21,334	$24,146	$24,852
Other College-Educated Workers	$23,623	$31,613	$37,875	$40,882

Source: U.S. Bureau of the Census, Current Population Survey, March 1988.

Lower salaries for teachers have been justified by some policymakers because most teacher contracts are only for 10 months or less of the year. However, as illustrated by Table 3, even after adjusting the earnings of other college-educated workers to reflect a 10-month period, the average teacher earns significantly less. Across the southeastern states, average teacher earnings in 1987 were between 51.1 and 91.3 percent of the average earnings of other college-educated workers adjusted on a 10-month basis. On a 12-month basis, teachers earned only 61.4 to 76.2 percent of the income of other college-educated workers, with a regional average of only 68.4 percent.

Table 3
Comparison of Average Earnings of Teachers and Other College-Educated Workers by State, 1987

	AL	FL	GA	MS	NC	SC
Teachers*	$23,500	$23,833	$24,632	$19,448	$23,775	$23,201
Other College-Educated Workers**						
10-month salary	$28,258	$28,066	$26,954	$26,409	$26,046	$28,205
12-month salary	$33,910	$33,679	$32,345	$31,691	$31,255	$33,846

*American Federation of Teachers, Survey and Analysis of Salary Trends, 1988.
**U.S. Bureau of the Census, Current Population Survey, March 1988.

Average annual salaries for the 1989-90 school year that are competitive with the earnings of other college-educated workers were computed for each of the six states served by the Southeastern Educational Improvement Laboratory. These average salaries, based on projections from Census Bureau data of the average earnings potential in other occupations employing college-educated workers, are presented in Table 4. Both 10-month and 12-month state average competitive teacher salaries are presented. For those states that base teacher salaries on the regional average, the averages for the Southeast also are provided.

Table 4
Competitive Average Teacher Salaries for 1989-90, By State and Region

	AL	FL	GA	MS	NC	SC	South-east
10-month	$33,526	$32,400	$31,779	$33,526	$30,764	$32,217	$31,972
12-month	$40,393	$39,036	$38,288	$40,393	$37,065	$38,815	$38,520

Table 5 provides a teacher pay schedule for the 1989-90 school year that would make teacher salaries competitive with the earnings opportunities of college-educated workers in the Southeast. The figures are based on an analysis of growth in earnings using the March 1982-March 1987 Census Bureau data for college graduates in full-time, salaried, nonteaching positions in the Southeast. For each cell in the table, the top figure (in boldface) is based on average earnings for a 10-month period, the length of a typical teaching contract. The bottom figure is based on earnings for a 12-month period.

Table 5
Competitive Teacher Salary Scale in the Southeast for 1989-90

Education Level	Years of Experience						
	0	5	10	15	20	25	30
B.A.	**$19,779**	**$23,972**	**$27,547**	**$30,504**	**$32,843**	**$34,565**	**$35,670**
only	$23,735	$28,766	$33,056	$36,605	$39,412	$41,479	$42,804
B.A.+	**$20,751**	**$24,943**	**$28,518**	**$31,476**	**$33,816**	**$35,538**	**$36,642**
18 hours	$24,901	$29,932	$34,222	$37,771	$40,579	$42,645	$43,970
M.A.	**$21,723**	**$25,916**	**$29,491**	**$32,448**	**$34,788**	**$36,510**	**$37,614**
completed	$26,068	$31,099	$35,389	$38,938	$41,745	$43,812	$45,137
M.A.+	**$23,019**	**$27,212**	**$30,787**	**$33,744**	**$36,084**	**$37,806**	**$38,910**
24 hours	$27,623	$32,654	$36,944	$40,493	$43,301	$45,367	$46,692
Doctorate	**$23,668**	**$27,860**	**$31,435**	**$34,392**	**$36,732**	**$38,454**	**$39,558**
completed	$28,401	$33,432	$37,722	$41,271	$44,079	$46,145	$47,470

To achieve these competitive levels of teacher salaries would require a substantially increased investment in educational funding. For teachers in the Southeast to reach parity in earnings on a 10-month basis would cost more than $427 million across the region. To achieve full earnings parity with other college-educated workers (i.e., earnings on a 12-month basis) would cost $2.45 billion. The estimated costs to achieve different levels of earnings parity by state are presented below in Table 6.

Table 6
Estimated Additional Annual Expenditures Necessary
to Reach Various Teacher Pay Parity Targets

	80 Percent Parity	90 Percent Parity	100 Percent Parity
Alabama	$ 99,146,000	$219,030,000	$338,913,000
Florida	$ 68,625,000	$396,011,000	$723,398,000
Georgia	$ 8,123,000	$195,808,000	$383,493,000
Mississippi	$130,969,000	$213,611,000	$296,252,000
North Carolina	$ 46,516,000	$233,884,000	$421,252,000
South Carolina	$ 57,272,000	$170,574,000	$283,875,000
Regional Totals	$410,652,000	$1,428,919,000	$2,447,185,000

From what sources will the money needed to bring teachers' salaries up to levels competitive with those of other college educated workers be appropriated? According to the findings of another recent Lab study, part of this money may come from increased taxes. Results of this study of public attitudes towards funding for education in the Southeast indicated that at least 69 percent of the public in each of the states served by the Lab is willing to pay more for public schools (Howell, 1988). The top priority for these additional education dollars was to keep teacher qualifications high, followed by the use of more technology in classrooms. High pay for quality teachers was ranked third, followed by providing a "truly rewarding" salary level for teachers.

Preface

This report is the fifth in a series of annual updates on wage comparability between teachers and other college-educated workers in the Southeast. The purpose of this series of reports is to describe the earnings obtained by college-educated workers in the region who are not teachers to provide a basis for generating a competitive salary schedule for teachers in the Southeast. There are many other important questions for those concerned about the problems of attracting and retaining qualified teachers for our children. This report addresses only one of these questions and does not provide a comprehensive look at the entire issue of teacher compensation or include such issues as beginning teacher salaries, the nature of the teacher labor market, the quality of the teaching force, teacher fringe benefits, supplemental earnings of teachers, or the economic feasibility of implementing competitive teacher salaries. The Southeastern Educational Improvement Laboratory (SEIL) and other organizations have addressed many of these issues in other reports.

It should be noted that because the sample size of the observations reported here is prescribed by the U.S. Census Bureau in its conduct of Current Population Surveys, the number of teachers in the sample is limited. Although a regional sample size of over 200 teachers provides an adequate estimate of teacher earnings, we have chosen to use the higher average teacher salary estimates obtained by the American Federation of Teachers in the annual survey of teacher salaries. Because these estimates are higher, they provide a more conservative estimate of the discrepancy between the earnings of teachers and other college-educated workers.

There are, of course, additional considerations, such as those listed above, to be taken into consideration in the final development of policies affecting teacher salaries. These concerns include the availability of teachers and incentives for attracting persons into the teaching profession. A recent study of the supply side of the teacher labor market, soon to be released by SEIL, found that a small percentage of newly hired teachers in the Southeast recently graduated from colleges of education. This same study also found that although teacher turnover rates have increased only slightly, the percentage of new teachers being hired is even greater. This is partly due to an increased demand for additional teachers created by the implementation of new educational reforms. In other words, the supply of new teachers graduating from colleges of education is less than the demand for new teachers, forcing a larger number of the newly hired teachers to be hired from a dwindling reserve pool of teachers. A policy initiative that could help reverse this trend is one that seeks to increase the attractiveness of the teaching profession by making teacher salaries more competitive with the earnings of other college-educated workers.

SEIL recognizes a number of people who helped develop this report. Ron Bird conducted all analyses and authored the report. Numerous SEIL employees also contributed to this effort. John Coulson, our institutional liaison at the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education, provided helpful suggestions. Other external reviewers were Bill Deaton, associate dean of education at Auburn University, and Fran Abee,

director of instruction and professional development of the South Carolina Education Association.

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An Analysis of the Comparability of Teacher Salaries
to the Earnings of Other College Graduates
in the Southeast: 1988 Update

by Ronald Bird

Introduction

Teacher earnings strongly impact the ability of public school systems to attract and retain adequate numbers of qualified professionals to staff the region's classrooms. To attract and retain good teachers, states in the Southeast must make teachers' wages competitive with the earnings opportunities of college graduates in other occupations. "Competitive" means equal in average income and career earnings growth potential. For schools to attract and retain truly excellent teachers--that is, persons of greater talent than the average college graduate--schools may have to pay salaries that are even higher than the earnings opportunities of the average college graduate. Otherwise, such highly qualified persons may seek earnings alternatives in nonteaching occupations.

At the heart of the issue is the question: How much compensation is really enough? What absolute amount of money do teachers have to be offered today that would be comparable with the earnings opportunities available to them in other occupations? The research reported here was conducted to determine what amounts teachers would need to be paid to make their salaries equivalent to the earnings of college graduates with similar education and work experience in other occupations in the Southeast.

This report describes the analysis of data derived from the U.S. Census Bureau's Current Population Survey (CPS), March 1988 and from other sources to provide an update of information regarding the comparability of public school

teacher salaries in southeastern states to the earnings opportunities of similarly educated persons in other occupations. This report is the fifth in the series on teacher wage comparability conducted for the Southeastern Educational Improvement Laboratory and its predecessor organization, the Southeastern Regional Council for Educational Improvement. Except for minor refinements in data definitions and analytical format, this report follows the methods and approaches described in the earlier reports in the series. Data analysis is confined to the six states served by the Southeastern Educational Improvement Laboratory: Alabama, Florida, Georgia, Mississippi, North Carolina, and South Carolina.

Background

The southeastern states have made progress in the improvement of teacher salaries in recent years. Table 1 shows the increase in teacher salaries between the 1982-83 and 1987-88 school years for each of the six states served by the Southeastern Educational Improvement Laboratory. Average teacher salaries have risen from $17,385 in 1982-83 to $24,572 during the 1987-88 school year. The overall growth has been at an average annual rate of 8.27 percent for the region. If this growth trend continues, average teacher salaries in the region will reach $26,587 for the current (1988-89) school year and $28,767 for the 1989-90 school year.

While the increase in teacher salaries has been significant, almost half of the increase has been offset by inflation of consumer prices. In real terms (i.e., adjusted for inflation), teacher salaries have grown at an average rate of only 4 percent.

Table 1
Average Annual Teacher Salaries
in the Six Southeastern States

	School Year					
	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88
Alabama	$17,850	$18,600	$20,295	$22,934	$23,500	$23,201
Florida	$18,275	$19,497	$20,836	$22,250	$23,833	$25,198
Georgia	$17,412	$18,631	$20,606	$23,046	$24,632	$25,736
Mississippi	$14,320	$15,812	$15,924	$18,472	$19,448	$20,750
North Carolina	$17,585	$18,311	$20,812	$22,476	$23,775	$25,073
South Carolina	$16,523	$17,384	$20,143	$21,428	$23,201	$24,241
Region	$17,385	$18,288	$20,489	$22,128	$23,637	$24,572

Source: American Federation of Teachers, Survey and Analysis of Salary Trends, 1988. Regional Composite computed as weighted average of state amounts using numbers of teachers in each state as weights.

Rising teacher salaries, even with inflation adjustments, might have improved the chances of attracting and retaining excellent teachers. However, these modest increases have been offset by the increasing earnings opportunities of college graduates in other occupations. Based on data compiled for this study and compared to the average annual 8.27 percent increase in average teacher salaries, the earnings of college-educated workers in other occupations in the Southeast have risen at an average annual rate of 5.45 percent. In absolute terms, teacher salaries have increased only 2.82 percent faster than the earnings of other college-educated workers during the past five years.

Furthermore, the magnitude of the average annual growth rate for teacher salaries during the past five years was largely influenced by the 12 percent

increase in teacher salaries between 1983-84 and 1984-85. Since then, the annual growth rate of teacher salaries has steadily declined. The gains in average teacher salaries have been smaller every year since. These increases were 8 percent from 1984-85 to 1985-86, 6.8 percent from 1985-86 to 1986-87, and only 4 percent from 1986-87 to 1987-88.

Despite some real growth in salaries, teachers remain at an earnings disadvantage compared to other college-educated workers. This disadvantage may negatively impact the quantity and quality of teachers. Focusing only on the percentage growth of teacher salaries without looking at comparative growth misses the heart of the issue.

Sample Data

The analysis presented in this report is based upon data compiled from the U.S. Bureau of the Census, Current Population Survey (CPS), which is conducted on a monthly basis and reported annually in March. The CPS data reflect the earnings experience of survey participants for the prior 12 months and are reported to the public the following March. The most recent data available for analysis were collected through March 1987 and published in March 1988. These data provide estimates of unemployment, employment trends, and household income for federal economic policy and information purposes. More than 56,000 households are sampled from all 50 states. All categories of educational attainment, occupation, age, and employment status are included in the sample.

Use of these CPS data is advantageous for this series of salary analyses for several reasons. First, because the survey is reported annually, it enables the analysis of the earnings of nonteacher college graduates to be updated annually and provides policymakers with forecasts of competitive salary

levels based on actual (and the most current) Census data. Second, the CPS data are representative of all households and workers, both nationally and regionally. The size of the total sample (N = 1,454 observations) is large enough to ensure statistically significant estimates of earnings by occupation, educational attainment, and age. Third, each observation is distinguished by state of residence so that recommendations can be adjusted to reflect any significant differences among states within the region. Finally, each observation has a three-digit occupation identification code for each individual that allows for comparisons of earnings across major categories of college-educated workers.

This report is based on a subset of the national sample that describes full-time, college-educated workers in the six southeastern states served by the Lab. As in previous reports in this series, the data set is analyzed in terms of the average earnings of teacher and nonteacher college graduates relative to age, education, residence (urban versus rural), gender, and race. From the March 1987 CPS data tape, all observations were extracted for workers who met the following criteria:

* Resident of Alabama, Florida, Georgia, Mississippi, North Carolina, or South Carolina.
* 21 to 65 years of age.
* Employed on a wage or salary basis--not self-employed.
* Completed at least a four-year college degree.
* Worked at least 40 weeks and an average of at least 35 hours per week during the previous year.

Persons under 21 and over 65 years of age were excluded from the data set because their labor market participation patterns are heavily influenced by factors not relevant to the conditions of the teacher labor market.

Individuals who reported self-employment income were excluded from the data set because their earnings include an implicit compensation for risk bearing and a return of self-supplied capital. Because of these additional elements, the earnings of self-employed individuals could not be easily compared to the earnings expectations for salaried positions such as those of public school teachers.

The coding of the data in the CPS file lists years of education on a scale that counts completion of high school as 13 and completion of four years of college as 17. Only observations showing 17 or more years of education were included in the data set. Observations were excluded if the subject claimed 17 years of education but responded negatively to the question regarding completion of a degree program. This procedure produced a data set that represents only actual college graduates. This restriction was adopted since certified public school teachers are required to be college graduates in every southeastern state.

Persons who worked fewer than 40 weeks per year or less than an average of 35 hours per week were excluded because their labor force participation was deemed to be essentially part-time and substantially different from the behavior patterns and earnings opportunities of full-time workers. However, observations showing fewer than 40 weeks of work during the past year were examined in detail to identify those persons who entered the labor force on a full-time basis during the previous year. These exceptions included those persons with current employment for 35 or more hours per week and earnings for the past year that were consistent with the number of weeks worked and the average weekly earning level of the indicated occupational category. The 43

observations meeting these conditions were included in the final data set and recoded to reflect their full work-year-equivalent income and weeks.

The data set was further refined to revise a number of observations (67) that showed earnings relative to weeks and hours of work insufficient to be consistent with minimum-wage laws. For these observations, the average earnings associated with the occupation code of the observation was substituted. Observations having missing or out-of-range values for key variables also were edited.

The result of the data compilation process was a data set of 1,244 observations of college graduates who were employed in occupations other than teaching during the year prior to March 1987 and 210 observations of college graduates who were employed as public school teachers. The observations were analyzed in terms of the following variables: occupational category, education, age, race, gender, residence by state and standard metropolitan statistical area (SMSA), number of weeks worked during the previous year, and average hours worked per week. Four broad occupational categories were defined as follows: Management (including administrative and management service occupations, such as accountants and personnel specialists); Professional Services (including physicians, lawyers, engineers, social workers, clergy, and college professors); Sales Occupations (including brokers, agents, and manufacturers' sales representatives); and Technical, Clerical, and Other Occupations (including equipment repair and maintenance workers, computer operators, secretaries, and all other occupations not included in the first three categories).

Because the Census data used for this report are based on a survey of individuals, there are certain limitations and cautions that should be observed

when analyzing them and interpreting the results. First, the survey is based on personal interviews of individual workers. Therefore, respondents' answers may be subject to errors of memory or misunderstanding.

Second, any sample is subject to random sampling errors. That is, the characteristics of the sample may not truly match the underlying population. For example, the average of the earnings of college-educated workers in the sample may be different from the true population mean. The probability of such error becomes smaller as the sample size increases. The sample size of the data set used for this report (1,454 observations) is large enough to provide highly reliable estimates of the characteristics of the underlying population at the regional level. Observations in the study data set of the number of teachers and the number of other college-educated workers (i.e., nonteachers) for each state are shown in Table 2.

Table 2
Number of Observations in Sample

State	Teachers	Other College-Educated Workers
Alabama	17	80
Florida	64	458
Georgia	16	135
Mississippi	24	91
North Carolina	65	381
South Carolina	24	99
Total	210	1,244

For some of the states in the region, these state sample sizes may not be adequate for independent inference of state-level earnings of nonteacher college graduates. This caution especially applies to the Alabama, Georgia, and Mississippi data because these states have the smallest sample sizes relative to their populations. Also, analysis of the Alabama and Mississippi samples indicates that these data sets include only urban resident observations.

Because of the sample size limitations for some states, this report deals primarily with regional-level findings. State-level data obtained from analysis of the CPS data are presented, where practical, only as a matter of interest. Where presented, they should be subject to the caveat regarding sample size. Fortunately, inference of teacher earnings by state from the CPS data is not necessary because reliable information on teacher earnings is available from other sources, such as state education department records and the annual American Federation of Teachers' salary survey. These AFT data are used for most comparisons.

Another shortcoming of the data is the lack of a direct measure of years of work experience in the CPS data set. Human capital theory suggests that because of the increased productivity that is developed by on-the-job learning and practice, earnings should increase as a worker accumulates work experience (Becker, 1975, p. 16). Unfortunately, the CPS sample data does not include any information regarding years of experience in the current occupation or even in all occupations. For this reason, age is used as a proxy for experience in the following analyses because it is the only data point available in the CPS data set that relates to the experience factor.

Actual experience may be expected to increase somewhat slower than chronological age because of periods of nonemployment in a worker's history. This bias in the data would be important only if teachers experienced significantly more time out of work than nonteachers, relative to age. For example, if the average college-educated worker at age 40 had 15 years of relevant work experience and the average teacher at age 40 had only 10 years of relevant work experience, the analysis of the data should adjusted for the five year difference by computing a competitive salary for a 40-year-old teacher as equivalent to the earnings of 35-year-old workers (i.e., having 10 years of experience) in nonteaching occupations. Because no data are available for making such a comparison of age/experience ratios, no such adjustment was made for the analysis described in this report.

Data from the 1982 through 1986 CPS surveys (as reported in previous reports in this series) were used in conjunction with the 1987 data to establish a time trend for the growth of earnings of nonteacher college graduates. The time trend was applied to the 1987 data to derive forecasts of earnings levels through 1990 in an effort to make the results of the analysis relevant to the policy decisions that states need to make to set teacher salary levels for the 1989-90 school year. The report includes estimates of average salary levels, parity ratios between teacher salaries and nonteacher earnings, and increases in state expenditure necessary to bring teacher salaries up to 80 percent, 90 percent, and 100 percent parity with earnings of other college-educated workers.

Data Analysis

Table 3 summarizes the demographic characteristics of teachers and other college-educated workers in the 1987 CPS sample for the southeastern states.

Table 3
Demographic Characteristics

	Teachers (n = 210)	Other College-Educated Workers (n = 1,244)
Mean Age	39.5	38.5
Gender (% female)	71.0%	32.0%
Race (% black)	24.0%	10.0%
Residence (% rural)	38.0%	20.0%
Education(# years post-BA)	.88	.64

Source: U. S. Bureau of the Census, Current Population Survey, March 1988.

The data in Table 3 show that teachers and other college-educated workers are quite similar in age and education levels. The major differences are found in the categories of gender and race. The teacher sample includes more females and blacks than the general sample of college-educated workers.

These data, compared with data from the four previous studies in the series (See Appendix A), illustrate a teacher population that is slightly older and much more rural than other college-educated workers in the region. Comparatively, the 1987 CPS sample of teachers from the Southeast includes fewer females than samples from previous years.

Average Annual Earnings

Table 4 compares the growth of average earnings of college-educated workers in occupations other than teaching to the earnings of teachers. The

Table 4
Growth of Earnings of Teachers and Nonteachers
in the Six Southeastern States

	School Year							
	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90
Other College-Educated Workers	$26,828	$27,753	$29,688	$31,019	$32,674	$34,455[1]	$36,333[1]	$38,313[1]
Percent Change		3.45	6.97	4.48	5.34	5.45	5.45	5.45
Teachers	$17,385	$18,288	$20,489	$22,128	$23,637	$24,572	$26,604[2]	$28,804[2]
Percent Change		5.19	12.04	8.00	6.82	3.96	8.27	8.27
Salary Deficiency	$ 9,443	$ 9,525	$ 9,199	$ 8,891	$ 9,037	$ 9,883	$ 9,729	$ 9,509
Percent Change		0.87	-3.42	-3.35	1.64	9.36	-1.56	-2.26

[1]Estimated value based on average annual growth rate of other college-educated workers, 1982-1986.
[2]Estimated value based on average annual growth rate of teachers, 1982-83 through 1987-88.

Sources: American Federation of Teachers, Survey and Analysis of Salary Trends, 1988 (for teacher salary data 1982-83 through 1987-88) and U. S. Bureau of the Census, Current Population Survey, machine-readable data file, March 1983-1987 (other college-educated workers data).

nonteacher data were compiled from the CPS data for 1983-1987. The nonteacher earnings for 1988 through 1990 were estimated by adding the average annual growth rate of nonteachers' earnings for 1983-1987 (5.45 percent) to the data for 1986-87 and to each succeeding year. Likewise, the teachers' earnings for 1988-89 and 1989-90 were estimated by adding the average annual growth rate of teachers' earnings for 1982-83 through 1987-88 (8.27 percent) to the data for 1987-88 and the succeeding year.

By comparing the CPS data estimates of nonteacher earnings to the American Federation of Teacher estimates of teacher salaries in Table 4, one obtains an estimate of the deficiency of teacher salaries compared to the earnings opportunities of other college-educated workers. Despite the large percentage gains in teacher salaries since 1982-83, a significant pay gap remains. If recent trends continue, that gap is projected to close only very slowly. The data analyzed here indicate a gap of more than $9,800 per year for 1987-88, an earnings differential of more than 40 percent between nonteachers and teachers.

The earnings data for college-educated workers in the Southeast were analyzed for a number of specific categories of occupations. Table 5 shows the results of that analysis. The first column of the table shows the actual average annual earnings for the 12 months ending March 1987 for each occupation (from the March 1988 CPS data). The figures in the second column (1990) are estimates of yearly earnings for March 1990 based on a projection of the 1983-1987 trends in earnings growth.

Table 5
Average Earnings by Occupation Category
College Graduate Salaried Workers
Southeastern Region
Based on CPS Survey Data

	March 1987	Estimated 1990
Public School Teachers*	$22,338	$29,239
All Nonteacher College Graduate Salaried Workers	$32,674	$38,313
Managers and Administrators and Administrative Support Services	$37,598	$44,024
Salaried Accountants	$33,052	$38,701
Professional Services Other Than Teaching	$32,465	$38,013
Salaried Physicians	$54,977	$64,373
Salaried Lawyers	$56,134	$65,728
Postsecondary Teachers	$28,234	$33,059
Engineers	$38,069	$44,575
Math and Computer Scientists	$32,987	$38,624
Sales Occupations	$35,846	$41,972
Manufacturers' and Distributors' Sales Representatives	$41,571	$48,676
Technical and Clerical	$25,531	$29,894
All Private-Sector Employees	$37,931	$44,414
Government Employees Except Teachers	$28,549	$33,428

*The estimate of teacher salaries for 1986-87 by the American Federation of Teachers was $22,128.

Source: U. S. Bureau of the Census, Current Population Survey, March 1988, machine-readable data file.

Physicians and lawyers lead the nonteacher group in earnings. The "Manager" category is a broad grouping of specific occupations including executive officers, office and program administrators, managers of operational facilities (e.g., a single store location), and the various categories of assistant managers and administrative service workers. In the subcategory of administrative support services, the accounting occupation was found to have an average income of only $33,052. This amount may seem low until one considers that the category includes types of accounting workers in addition to certified public accountants (CPAs). Many accounting jobs in government and industry held by college graduates involve less training and responsibility than that associated with the CPA designation.

The high earnings of persons in "Sales Occupations" ($35,846), particularly those in the subcategory of manufacturers' and distributors' sales representatives ($41,571), are noteworthy because employers in these fields recruit persons with strong interpersonal skills. These characteristics also are associated with good teachers. If current trends continue, the earnings of persons in sales occupations will average $41,972 by March 1990.

The category of "Professional Services" is particulary noteworthy because it is the Census Bureau's occupational category that includes public school teachers. The average earnings of professional service workers other than teachers reported for March 1987 ($32,465) was significantly higher than average teacher salaries in the 1986-87 school year ($22,338).

Table 6 compares CPS data on the average earnings of nonteaching college graduates with AFT data on average teacher salaries for each southeastern state. The ratios of the earnings of teachers to those of nonteachers indicate that teacher salaries are not even 77 percent of the earnings of other

college-educated workers in any state. This deficiency may have negative repercussions for teacher recruitment and retention in the Southeast.

Table 6
Comparison of Average Earnings of
College Graduate Salaried Workers
by State, 1987

	Teachers	Other College-Educated Workers	Difference	Ratio*
Alabama	$23,500	$33,910	$10,410	.693
Florida	$23,833	$33,679	$ 9,846	.708
Georgia	$24,632	$32,345	$ 7,713	.762
Mississippi**	$19,448	$31,691	$12,243	.614
North Carolina	$23,775	$31,255	$ 7,480	.761
South Carolina	$23,201	$33,846	$10,645	.685

*Ratio = $\frac{\text{Teacher Salary}}{\text{Earnings of Other College-Educated Workers}}$

**To some degree, Mississippi addressed its salary differential problem for the 1988-89 school year by awarding its teachers with a 15 percent raise.

Sources: American Federation of Teachers, Survey and Analysis of Salary Trends, 1988 (teacher salary data) and U. S. Bureau of the Census, Current Population Survey, March 1988, machine-readable data file (data for other college-educated workers).

CPS data also were analyzed for teachers and other college-educated workers in other regions of the country. These results are presented in Table 7. Regional average teacher earnings range from lows of around $22,000 in the southeastern, Appalachian, and mid-continental regions to highs of more than $27,000 in the Far West and Northeast. However, a different pattern exists for the average earnings of other college-educated workers. While teachers earn only about 63 percent of what is earned by other college-educated

workers in the Appalachian and southwestern regions, they earn about 74 percent of the earnings of nonteachers in the Northwest and Northeast. Overall,

Table 7
Comparison of Average Earnings of College Graduate Salaried Workers by Region, 1987

	Teachers	Other College-Educated Workers	Difference	Ratio*
Northeast (CT, ME, MA, NH, NY, RI, VT)	$27,076 [243]**	$36,861 [1,874]	$ 9,785	.735
Mid-East (DE, DC, MD, NJ, PA)	$26,969 [169]	$37,490 [1,403]	$10,521	.719
Appalachia (KY, TN, VA, WV)	$22,453 [68]	$35,899 [410]	$13,446	.625
Southeast (AL, FL, GA, MS, NC, SC)	$22,338 [210]	$32,674 [1,244]	$10,336	.684
North Central (IL, IN, IA, MI, MN, OH, WI)	$26,063 [253]	$36,342 [1,522]	$10,279	.717
Mid-Continent (CO, KS, NE, MO, WY, ND, SD)	$22,784 [161]	$32,822 [712]	$10,038	.694
Southwest (AK, LA, NM, OK, TX)	$23,355 [159]	$37,001 [826]	$13,646	.631
Northwest (AK, HI, ID, MT, OR, WA)	$25,779 [118]	$34,760 [613]	$ 8,981	.742
Far West (AZ, CA, NV, UT)	$27,172 [141]	$37,645 [1,266]	$10,473	.722
United States	$25,267 [1,512]	$35,993 [9,870]	$10,726	.702

*Ratio = $\frac{\text{Teacher Salary}}{\text{Earnings of Other College-Educated Workers}}$

**Numbers in brackets refer to the number of observations in the CPS data.

Source: U. S. Bureau of the Census, Current Population Survey, March 1988, machine-readable data file.

teachers earned about 70 percent of the earnings of other college-educated workers in the United States.

Variability of Career Earnings

Another consideration that may affect the ability of schools to recruit qualified teachers is the variation in earnings among persons within occupational categories. The variation of earnings within a sample may indicate the range of earnings growth that a person in an occupation can expect over the course of a career.

Table 8 provides a variation index for earnings of teachers compared to those of other college-educated workers in the Southeast. This index is the ratio of the standard deviation of the earnings for each occupational category to the standard deviation of earnings of teachers in the sample data. The earnings of professional service workers other than teachers showed 3.3 times

Table 8
Variation of Earnings by Occupation
Southeastern Region, 1987

Occupational Category	Variation Index*
Teachers	1.00
Professional Services other than Teaching	3.30
Management and Administration	3.60
Sales Occupations	3.80
All Private Sector Employees	3.50
Government Employees except Teachers	1.80

*Variation Index = $\frac{\text{Standard Deviation for Occupation}}{\text{Standard Deviation for Teachers}}$

Source: U. S. Bureau of the Census, Current Population Survey, March 1988, machine-readable data file.

more variation than teacher earnings. The earnings of workers in sales occupations varied 3.8 times more than teacher earnings. These results indicate that a person entering a career in engineering, accounting, management, sales, or other fields can expect to realize much larger income growth over the length of a career than teachers can expect.

The relatively poor earnings growth potential for teachers also is revealed in the distribution of earnings across age categories. This difference between earnings potential for teachers and other occupations is important because the opportunity for income growth based on increasing productivity and experience may be a factor that influences many capable individuals to prefer

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Table 9
Earnings Categorized by Characteristics
Southeastern Region, 1987

	Teachers	Nonteachers	Difference
Earnings by Age			
Age 20-29	$19,073	$23,623	$ 4,550
Age 30-39	$21,334	$31,613	$10,279
Age 40-49	$24,146	$37,875	$13,729
Age 50-59	$24,852	$40,882	$16,030
Earnings by Gender			
Female	$21,333	$23,111	$ 1,778
Male	$24,848	$37,091	$12,243
Earnings by Race			
Black	$23,625	$23,321	-$ 304
White	$21,935	$33,664	$11,729
Earnings by Residence			
Rural	$20,366	$29,876	$ 9,510
Urban	$23,526	$33,389	$ 9,863
Earnings by Education			
BA Degree only	$21,287	$30,951	$ 9,664
BA plus one year	$21,986	$30,707	$ 8,721
BA plus two years	$23,935	$37,437	$13,502

Source: U. S. Bureau of the Census, Current Population Survey, March 1988, machine-readable data file.

other careers over teaching. Table 9 features a comparison of teacher and nonteacher earnings categorized by age categories as well as other characteristics. Note that the difference between teacher and nonteacher earnings is small for young workers but becomes marked for older and more experienced worker groups.

Table 9 also compares teacher and nonteacher earnings on the basis of gender, race, place of residence, and educational level. Data indicate that in the year ending March 1987, teachers earned more than nonteachers only in the category of race. Black college graduates earned an average of $23,625 as public school teachers in 1987, but only an average of $23,321 in nonteaching occupations. This finding is not an anomaly in the data, having been observed in each of the past five years in CPS survey data. The difference may be explained partly by the differences in the age distribution of black college graduates in teaching and nonteaching occupations. Black college graduates in nonteaching occupations are generally younger and, therefore, probably less experienced, than the average college graduate worker.

Regression Analysis

Calculating the actual difference between teachers' salaries and their earnings opportunities in other occupations is more complex than is implied by the simple comparison of group average earnings. Teachers typically have completed more years of postbaccalaureate education than other college graduates (see Table 3). This difference should be reflected in any estimation of their earnings alternatives because incomes generally rise with educational attainment, but not for teachers.

Teachers and the general population of working college graduates also differ in other ways that may affect earnings, such as age or work experience and gender and racial characteristics. These characteristics also are linked to earnings differences, although it would be inappropriate policy to use differences based on historical gender and race discrimination to set teacher pay.

To analyze these differences and incorporate them appropriately into the estimation of teacher earnings opportunities, a multiple regression analysis of the Census Bureau's 1987 CPS data was performed to develop a model that accounts for the differential impact of education, experience, and demographic and economic variables. This model estimates the earnings opportunities of college graduates in nonteaching occupations by substituting into the regression model values specific to the teacher work force. These estimates are the amounts that average teacher salaries should equal to make teacher earnings competitive with those of other occupations in which persons with the same demographic characteristics (e.g., average age, gender distribution, racial composition) work.

Table 10 presents the statistical results of the multiple regression analysis performed on the CPS data. Dummy variables were used for four of the six southeastern states (FL, GA, NC, and SC) to account for differences in average earnings between states, controlling for differences in the demographic and economic characteristics of the observations from each state. Too few observations were included from the other two states (AL and MS) to allow for individual state estimation, and these two states were explicitly defined together. The regression analysis results define a linear equation that relates characteristics of a group to the predicted average earnings in

nonteaching occupations. The model includes instrumental variables for three of the four occupational categories: management (MGMT), professional services (PROF), and SALES. The "all others" category was defined implicitly. A dummy variable for teachers (TEACHER) was included among these independent variables.

Table 10
Regression Analysis Summary
College Graduates' Earnings Opportunities
in Nonteaching Occupations
Southeastern Region, 1987 Current Population Survey

Data for 1,454 observations of college graduate workers in six southeastern states, March 1987. Data compiled from U. S. Bureau of the Census, Current Population Survey, March 1988, machine-readable data file.

Linear multiple regression model

Dependent Variable: Annual Earnings (Mean = $32,897.78)

Number of Observations: 1,454

Constant term - 74009

Variable	Mean	Coefficient	t-Statistic
TEACHER	.1444	-1217.63	-2.69402
MGMT	.2918	7104.64	5.86391
PROF	.3175	4397.09	3.62928
SALES	.1382	5917.08	3.98982
RURAL	.2000	-3608.34	-3.45421
GENDER	.3200	-9127.79	-10.0319
ETHNIC	.1000	-4016.50	-3.08600
AGE	38.50	1479.70	5.13659
AGESQR	1482.25	- 12.66	-3.75667
GRAD	17.64	1328.42	2.74472
WEEKS	52.00	642.34	3.39395
HOURS	40.00	330.62	5.87559
NC	.3063	-2842.03	-2.19341
SC	.0796	-1347.41	-1.75787
GA	.1085	-1797.76	-1.07742
FL	.3682	-1158.91	-1.43032

Standard Error of Estimate = 12378.42

R^2 = 0.395815

Other variables in the equation include place of residence status (RURAL or urban), GENDER (male or female), ETHNIC characteristic (black or white), AGE, the square of age (AGESQR), years of postgraduate education (GRAD), number of weeks worked during the prior year (WEEKS), and average hours worked per week during the prior year (HOURS).

The mean values of each of the variables indicate the proportion of total observations for college-educated workers in each category or the average for that variable. For example, 68 percent of the college-educated workers were male, 10 percent were black, and the average age was 38.5 years.

The coefficients of the occupational variables indicate the respective differences in the predicted earnings of management, professional, or sales workers versus the predicted earnings of all other college-educated workers. For example, the coefficient of the variable MGMT indicates a $7,105 addition to the predicted annual income of a college graduate employed in a management occupation compared to that of workers in nonteaching occupations other than professional or sales occupations. Thus, the model, as formulated, can be used to estimate earnings opportunity in any one of the occupational categories or to predict the earnings for the composite of all nonteaching occupations. The positive coefficients for the occupational categories of management, professional services, and sales indicate an earnings advantage in comparison to the college-educated workers in the technical, clerical, and other categories.

The occupational category including technical and clerical workers was not identified as an explicit independent variable in the regression equation. This category includes all college-educated workers in occupations other than the identified ones (Teacher, Management, Professional Services, and Sales). The negative coefficient for the variable TEACHER indicates that teacher

salaries tend to be lower (an average of $1,218) than salaries of otherwise similar persons in the technical, clerical, and other categories of occupations. This finding is remarkable because many of the occupations in the technical, clerical, and other occupational groups do not require college graduate skills. However, because only college graduates were drawn from the CPS data for this analysis, these college graduates in technical, clerical, and other occupational groups do earn higher salaries.

The negative coefficient for the variable RURAL indicates the impact of $3,608 reduced earnings for rural residence. The coefficient of the variable GENDER indicates the negative impact of $9,128 for being female. The coefficient for the variable ETHNIC indicates the negative impact of $4,017 for being black.

Therefore, being a teacher, living in a rural area, being female, and being black all had negative effects on earnings. The values indicate the relative income disadvantage associated with those characteristics compared to the null alternatives (not a teacher, not black, metropolitan-area resident, and male).

The coefficient of AGE is positive ($1,480), but the coefficient of the square of age (AGESQR) is slightly negative (-$13), indicating a slowing of income growth as age increases. The coefficient of GRAD is positive, indicating that each additional year of postgraduate study adds $1,328 to predicted earnings. The coefficients for WEEKS (worked per year) and HOURS (worked per average week) are both positive, adding $642 and $331, respectively, to predicted earnings.

All of the t-statistics for the variables discussed above are greater than 2.6. These values indicate statistical significance beyond the .01 level of

significance for each of the variables. The remaining variables were the state of residence dummy variables. Because of the small numbers of observations from Alabama and Mississippi, neither of these states was explicitly defined in the model (i.e., both states were defined implicitly). Except for the North Carolina variable ($p < .05$), the coefficients of these explicitly implied state variables were not statistically significant. Despite the lack of good fit, the state variables were retained in the regression equation because 1) the adjusted R^2 indicates that inclusion of these variables did increase the overall explanatory power of the equation statistic, and 2) the ability to generate state-specific predicted earnings is a positive feature of the model.

Application of the Regression Model

The regression model was used to estimate the income that teachers in the Southeast could earn in nonteaching occupational alternatives. This amount may be interpreted as the target to make the average teacher salary competitive with the salaries of occupations of other college graduates. The regression equation produces an income estimate relevant for the 1986-87 school year (more precisely, for the 12 months ending March 1987). Because education policy-makers need information regarding competitive teacher salary levels for the future, the growth trend of nonteacher earnings for 1982-1987 was applied to the March 1987 earnings estimate to produce forecasts for subsequent years through 1990.

To produce estimates of competitive teacher salary levels, the typical education and age (as a proxy for experience) characteristics of public school teachers in the Southeast were entered into the regression model. Values for the occupational category variables were entered into the model at levels

representing the relative proportions of each of these occupational categories within each state. Values for the variables indicating gender, race, and urban/rural residence were entered into the equation according to the average value of such variables for the nonteachers in the data set.

Using values of gender and race variables characteristic of present teachers was considered, but that approach was rejected for two reasons. First, the teacher work force includes more blacks and women than the general college-educated work force. In the nonteacher market, blacks and women earn significantly less than whites and males. Use of the teacher work force proportions of blacks and women as variable values in the regression equation would have resulted in a salary schedule with lesser amounts than those derived for this report. This bias is inconsistent with established public policy. The fact that women and blacks earn less than other college-educated workers is at least partially due to past practices of discrimination in employment. Stated public policy now eliminates such discrimination. It would be inappropriate to recommend that teacher compensation policies in the South be established on a basis that derives financial savings for government for racial and sexual discrimination. The second reason for using nonteacher gender and racial characteristics in the model, rather than teacher characteristics, is related to the internal economic logic of the model. Women and blacks are more highly represented in the teacher work force because past practices made alternative occupations either impossible or unattractive. To use the proportions of women and blacks presently found in the teacher work force would introduce an element of circularity into the model and include recommendations designed to maintain the status quo.

Table 11 shows the results derived from the regression model and projected for the 1990 school year for the region and for each state in the region. The amounts are presented in pairs. The larger of each pair represents the earnings estimate calculated on a 12-month basis. The smaller amount represents the earnings estimate calculated on a 10-month basis. The amounts represent the estimated average earnings that persons possessing the education and experience characteristic of teachers could find in nonteaching occupations.

Table 11
Estimated Earnings Alternatives
for Public School Teachers
1990

	Earnings in Occupations other than Teaching
Southeast	**$31,972** $38,520
Alabama	**$33,526** $40,393
Florida	**$32,400** $39,036
Georgia	**$31,779** $38,288
Mississippi	**$33,526** $40,393
North Carolina	**$30,764** $37,065
South Carolina	**$32,217** $38,815

Note: Figures printed in boldface are based on earnings for a 10-month period. Nonbold figures are based on earnings for a 12-month period. A fully competitive market-sensitive average teacher salary would fall within this range.

The individualized state amounts for earnings of college graduates in occupations other than teaching should be interpreted cautiously because of the small numbers of observations in some states. For example, the regression equation implies that average salaries in Alabama and Mississippi should be higher than in other states to compete with the nonteacher occupation market. However, all of the regression coefficients for individual state instrumental variables showed relatively low statistical significance and added little to the explanatory power of the equation. In general, the regional composite represents a more accurate basis for estimation of alternative earnings than the state-specific estimations.

The contractual work year of a public school teacher is typically 10 months per year; most other college-graduate workers are employed on a 12-month basis. Because of this difference, it is sometimes argued that teacher salaries could be only 10/12ths of other salaries to be equivalent. That argument ignores the possibility that many workers may not value 2 months of "leisure" highly enough to forgo 2/12ths of their pay. This possibility is important if the goal of public policy is to make the teaching profession monetarily competitive with other occupations requiring similar education and experience. Excellent teaching requires study and preparation during the summer even though classes are not in session and the teacher is not required to work at the school building. The 10/12ths view of teacher employment ignores the full dimensions of teachers' professional responsibilities and activities. For these reasons, it is recommended that the full 12-month equivalent earnings alternative derived from the regression model be used as the target for teacher salary improvement.

By varying the values of education and age in the regression equation, the model can be used to derive a set of earnings estimates that constitute a competitive salary scale for teachers. The salary scale, shown in Table 12, provides the variation in teachers' salaries that should exist in relation to education and experience to make teaching competitive with other occupations. The amounts in the table are presented as pairs: the larger amount represents a 12-month salary basis, and the smaller (**in bold**) amount represents a 10-month salary basis. Each pair of figures represents an appropriate salary range given various levels of experience and education. For example, the table indicates that the beginning salary for a person with a baccalaureate degree should be between $19,779 and $23,735 in 1989-90 to be equivalent to earnings opportunities in other occupations. For a teacher with 10 years of experience

Table 12
Competitive Teacher Salary Scale for 1989-90

Education Level	Years of Experience						
	0	5	10	15	20	25	30
B.A.	**$19,779**	**$23,972**	**$27,547**	**$30,504**	**$32,843**	**$34,565**	**$35,670**
only	$23,735	$28,766	$33,056	$36,605	$39,412	$41,479	$42,804
B.A.+	**$20,751**	**$24,943**	**$28,518**	**$31,476**	**$33,816**	**$35,538**	**$36,642**
18 hours	$24,901	$29,932	$34,222	$37,771	$40,579	$42,645	$43,970
M.A.	**$21,723**	**$25,916**	**$29,491**	**$32,448**	**$34,788**	**$36,510**	**$37,614**
completed	$26,068	$31,099	$35,389	$38,938	$41,745	$43,812	$45,137
M.A.+	**$23,019**	**$27,212**	**$30,787**	**$33,744**	**$36,084**	**$37,806**	**$38,910**
24 hours	$27,623	$32,654	$36,944	$40,493	$43,301	$45,367	$46,692
Doctorate	**$23,668**	**$27,860**	**$31,435**	**$34,392**	**$36,732**	**$38,454**	**$39,558**
completed	$28,401	$33,432	$37,722	$41,271	$44,079	$46,145	$47,470

Note: Figures printed in boldface are based on earnings for a 10-month period, the length of a typical teaching contract. The nonbold figures are based on earnings for a 12-month period.

and a master's degree, the competitive salary range would be between $29,491 and $35,389.

Conclusions

Despite the recent growth of teachers' salaries in the Southeast, earnings are still too low to attract and retain adequate numbers of qualified teachers. A competitive average teacher salary amount in the region in 1989-90 is about 50 percent higher than the actual regional average teacher salary level in 1987-88. State and local governments in the region cannot be expected to increase salaries enough in a single year to correct such a large deficiency. Progress has been made, but the improvement has been relatively small compared to the absolute deficiency of teacher salaries. During the 1982-88 period, average teacher salaries grew at a rate of approximately 8.27 percent per year. At this growth rate and with the earnings of nonteachers continuing to grow at a rate of 5.45 percent per year, it would take 13 years to close the gap between teachers' salaries and the earnings opportunities of competing occupations. It would take 6 years at this level of commitment just to achieve the lower end of the competitive range indicated by the 10-month salary equivalency.

The problem may be compounded by the recent declining commitment to further raise teacher salaries in the Southeast. Most of the average 8.27 percent per year increase since 1982-83 was due to a 12.04 percent regional teacher salary increase for the 1984-85 school year. Since that time, no percentage of annual teacher salary increases has met or exceeded the average of 8.27 percent. Even more disturbing is the average regional teacher salary increase for 1987-88 of less than 4 percent. This figure is almost a full 1.5

percent below the average increases granted to other college-educated workers, indicating that not only are teachers no longer closing the gap in absolute dollars, they also are getting lower percentage increases now.

To achieve competitive levels of teacher salaries will require commitment and perseverance. It will require commitment to a competitive salary goal and commitment to a significant, but practical, rate of annual salary increases for teachers. It will require perseverance to continue a high level of salary growth every year for a number of years. For example, a 10 percent annual increase in teacher salaries may be a practical goal for most southeastern states. If the states in the region commit themselves to a 10 percent annual increase in teacher salaries beginning with the 1988-89 school year, full parity with the forecast 12-month average earnings of nonteachers could be reached by 1995. Thereafter, relatively smaller annual increases would keep teacher salaries at the competitive level.

Table 13 shows estimates of increases in annual payroll budgets for public school teachers that each of the southeastern states would need to finance to reach 80 percent, 90 percent, or 100 percent parity of teacher salaries with the 12-month full-time earnings opportunities of college graduates in occupations other than teaching. The estimates are based on comparison of 1987-88 base-year teacher salaries, numbers of teachers, and alternative earnings opportunities within each state. They do not include years of experience, assuming these to be somewhat uniform across states. Any additional impact of inflation would make the actual requirements for future years higher. These figures provide only an estimate of the actual annual expenditures needed for teacher salaries to reach parity with the salaries of other college-educated workers. However, the size of these estimates indicates that a

Table 13

Additional Annual Expenditures Necessary to Reach Teacher Pay Parity Targets

	80 Percent Parity	90 Percent Parity	100 Percent Parity
Alabama	$ 99,146,000	$219,030,000	$338,913,000
Florida	$ 68,625,000	$396,011,000	$723,398,000
Georgia	$ 8,123,000	$195,808,000	$383,493,000
Mississippi	$130,969,000	$213,611,000	$296,252,000
North Carolina	$ 46,516,000	$233,884,000	$421,252,000
South Carolina	$ 57,272,000	$170,574,000	$283,875,000
Regional Totals	$410,652,000	$1,428,919,000	$2,447,185,000

significant shift of public resources would be needed for most states to reach these teacher wage parity targets.

It should be noted that beginning teacher salaries are already near or within the indicated range in most states in the Southeast. However, as was clearly demonstrated by the increasing differences in compensation across age cohorts, a need exists for compensation policies that provide more room for income growth during the professional career of a teacher. Without such policies, the retention of teachers may become an even more serious problem than the recruitment of teachers.

The key to successfully making teacher pay competitive is commitment to a long-term strategy of planned increases. There can be no one-year, quick solution. States should identify a practical rate of annual salary growth and

adopt a firm plan to continue that annual growth for the number of years needed to achieve the goal of a competitive teacher salary level.

Higher teacher salaries alone will not guarantee better schools. Improvement of public education requires creative efforts on many fronts. However, improved salaries are important because human resources are the critical element in all education reform strategies. No strategy of improvement is likely to succeed unless sufficient compensation is offered to attract and retain the calibre of talented and hard-working people needed to successfully implement quality educational programs.

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APPENDIX A

Comparison of CPS Data Set Characteristics:
Southeast Region, 1983 through 1987

Table A-1
Comparison of CPS Data Set Characteristics:
Southeastern Region, 1983 - 1987

	Teachers					Other College-Educated Workers				
CPS Dataset:	1983	1984	1985	1986	1987	1983	1984	1985	1986	1987
Number of Observations	N/A	N/A	191	203	210	N/A	N/A	991	1,167	1,244
Average Age (in years)	39.2	38.3	38.7	39.0	39.5	38.7	39.4	39.2	38.6	38.5
Gender (percent female)	78.8	79.1	79.1	77.0	71.0	30.7	31.7	31.1	32.0	32.0
Ethnicity (percent black)	21.4	20.3	20.9	24.0	24.0	12.0	11.3	11.9	9.0	10.0
Residence (percent rural)	41.6	40.4	37.9	35.0	38.0	30.3	27.7	29.0	21.0	20.0
Education Level (B.S.=17.0)	17.7	17.9	17.9	17.9	17.9	17.6	17.5	17.7	17.6	17.6

Sources: U. S. Bureau of the Census, Current Population Survey, machine-readable data files, March 1984-1988.